

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/390,228 09/03/99 OTOBA M 10873.274US1

MERCHANT & GROULD P.C.
P.O. BOX 2903
MINNEAPOLIS MN 55402-0903

IM22/0719

EXAMINER

ANGEBRANDT, M

ART UNIT

PAPER NUMBER

1756

DATE MAILED:

07/19/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

BEST AVAILABLE COPY

Office Action Summary

Application No.
09/390,228

Applicant(s)
Otoba et al.

Examiner
Martin J. Angebranndt

Group Art Unit
1756



☒ Responsive to communication(s) filed on May 16, 1900

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-74 is/are pending in the application.

Of the above, claim(s) 32-49 and 65-73 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-31, 50-64, and 74 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims 1-74 are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1756

- 1 Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-31 drawn to an optical recording media with a protective layer and a barrier layer including phase change recording materials and nominal process of use classified therewith, classified in class 430, subclass 270.13.
 - II. Claims 50-64 and 74 , drawn to use of optical recording media with a protective layer and/or a barrier layer including phase change recording materials, classified in class 430, subclass 270.13.
 - III. Claims 32-49 and 65-73, drawn to a barrier layer produced by sputtering methods, classified in class 204, subclass 192.11.
- 2 Inventions group I and II are not separate and distinct at this time as the process of use is nominal for the article.
- 3 Inventions group III and group I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the optical recording medium may be made using vapor deposition (incl. CVD) or sol-gel processes for forming the protective and barrier layers.
- 4 Inventions group III and group II are related as process of making and process of use. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different products than those used in the

Art Unit: 1756

process of use or (2) that the product used in the process of use as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the optical recording medium may be made using vapor deposition (incl. CVD) or sol-gel processes for forming the protective and barrier layers.

5 Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and divergent subject matter, restriction for examination purposes as indicated is proper.

6 Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

7 A telephone call was made to Douglas Mueller (30,300) on March 8, 2000 to request an oral election to the above restriction requirement, but did not result in an election being made.

8 Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

9 Applicant's election without traverse of groups I and II in Paper No. 6 is acknowledged.
Claims 32-49 and 65-73 are withdrawn from consideration.

Art Unit: 1756

10 Claims 1-31,50-64 and 74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

 In claim 50, "C" is not a group, but is a member of group IVa. Nitrogen and oxygen are members of group Va and VIa respectively. (this may be due to the periodic table being used by the applicant.)

 In claim 1, nitrogen is already recited as part of the barrier layer. (ie it is doubly recited).

 In claim 53, please insert --layer-- after "containing" in line 3.

11 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

 A person shall be entitled to a patent unless --

 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

 (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

12 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1756

13 Claims 50-52,55-58,60 and 74 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yoshitomi et al. JP 63-171453.

See examples described with respect to the table on page 3. Note the use of GeN, GeAlN and GeZrN in page 3. note that the examiner holds that the substrate is an adjacent layer.

The examiner is unsure of the periodic table the applicant used to describe the groups. The applicant should provide a copy with the next response.

14 Claims 50-52,55-58,60 and 74 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Kinou et al. JP 03-248338.

See examples described in the abstract. The use of GeSiZrN in the examples and in the abstract. Note that the examiner holds that the substrate is an adjacent layer.

The examiner is unsure of the periodic table the applicant used to describe the groups. The applicant should provide a copy with the next response.

15 Claims 50-52,55-58,63,64 and 74 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yoshioka et al. JP 04-052188.

The example on page 4 is a substrate, a dielectric layer, an SbGeTe recording layer, a GeN layer, a second dielectric layer and a reflective layer.

16 Claims 1,2,4-9,12,19-31,50-52,55-58,63,64 and 74 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Yoshioka et al. '363.

Art Unit: 1756

Figure 3, shows a substrate, a 160 nm SiO₂-ZnS dielectric layer, GeTeSb nitride surface layer, an SbGeTe recording layer, a second 20 nm SiO₂-ZnS dielectric layer, a, Al reflective layer and a protective layer.

17 Claims 50-52,55-58,60 and 74 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Tsutsumi et al. JP 02-037548.

See examples described in the abstract. The use of GeAlN in the examples and in the abstract. Note that the examiner holds that the substrate is an adjacent layer.

18 Claims 50-52,55-58,60 and 74 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 01-276453.

See examples described in the abstract. The use of GeSiN in the examples and in the abstract. Note that the examiner holds that the substrate is an adjacent layer.

19 Claims 50-52,55-58,60 and 74 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Shino et al. JP 05-274726.

See examples described in the abstract. The use of GeSiNH in the examples on page 15 and in the abstract. Note that the examiner holds that the substrate is an adjacent layer.

20 Claims 50-52,55-58,60 and 74 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 04-069833.

See examples described in the abstract. The use of GeSiNH in the examples on page 15 and in the abstract. Note that the examiner holds that the substrate is an adjacent layer.

Art Unit: 1756

21 Claims 1-9,12,19-31,50-52,55-58,63,64 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka et al. '363, in view of Yoshioka et al. JP 04-052188.

It would have been obvious to one skilled in the art to provide a GeN or GeNO layer on both sides of the optical recording medium of Yoshioka et al. '363 based upon the showing by Yoshioka et al. JP 04-052188 that this layer is beneficial between the recording layer and the upper dielectric layer.

22 Claims 1-31,50-64 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka et al. '363, in view of Yoshioka et al. JP 04-052188 and either of Yoshitomi et al. JP 63-171453, Kinou et al. JP 03-248338, JP 01-276453 or Shino et al. JP 05-274726.

In addition to the basis above, it would have been obvious to include additives, such as Al, Si, H, and Zr, in the GeN and GeNO protective layers of the invention of Yoshioka et al. '363 as modified by Yoshioka et al. JP 04-052188, based upon the disclosure of equivalent function as protective layers within either of Yoshitomi et al. JP 63-171453, Kinou et al. JP 03-248338, JP 01-276453 or Shino et al. JP 05-274726 and particularly the strong showing of equivalence by Yoshitomi et al. JP 63-171453.

23 The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground

Art Unit: 1756

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

24 Claims 1-31,50-64 and 74 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-33 of U.S. Patent No. 5,914,214. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims specifically embrace the use of a move inhibiting layer comprising an oxynitride of Ge as set forth in claim 33 with a phase change recording layer and the move inhibiting layer is between the protective layer and the recording layer.

25 Claims 1-31,50-64 and 74 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12,14-15,25-27,30-42 and 54-55 of copending Application No. 09/050762. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims specifically embrace the use of a move inhibiting layer comprising an oxynitride of Ge with a phase change recording layer and the move inhibiting layer is between the protective layer and the recording layer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The provisional nature may be withdrawn in the next office action without prejudice as the identified application has been allowed.

Art Unit: 1756

26 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP 02-078041 teaches the use of Zr(Ti,Nb,Ta,Ge,V)-O-N protective layers.

Tsutsumi et al. '133 teaches AlGeN protective layers. (2/42)

Maeda et al.'686 teaches the use of GeN protective layers. (10/48)

Takada et al. '808 teaches the use of GeO or GeN protective layers. (20/21-24).

27 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Angebranndt whose telephone number is (703) 308-4397.

I am normally available between 7:30 AM and 5:00 PM, Monday through Thursday and 7:30 AM and 4:00 PM on alternate Fridays.

If repeated attempts to reach me are unsuccessful, my supervisor may be reached at (703) 308-4552.

Facsimile correspondence should be directed to (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.



Martin J. Angebranndt
Primary Examiner, Group 1750
July 14, 2000